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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,771	03/08/2004	Zhiping Shan	1094-27	4090
28249	7590	08/29/2006	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			VANOY, TIMOTHY C	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/795,771

Applicant(s)

SHAN ET AL.

Examiner

Timothy C. Vanoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36, 38 and 48-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 48-52 is/are allowed.
- 6) ☒ Claim(s) 11-36 and 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1 and the claims dependent thereon have not been rejected under either 35USC102 or 35USC103 because claim 1 has been amended to recite that an organic aluminum source is combined with a first solvent to form a mixture in a first step. Then, after the pore-forming agent is added to the mixture, a second solvent is added. This feature is not taught or suggested by either examples 1 or 3 in WO 00/15551. For example, example 1 in WO 00/15551 discloses the addition of aluminum isopropoxide to an aqueous solution of tetrapropylammonium hydroxide. Then, the pore forming agent triethanol amine is added, followed by the addition of tetraethyl orthosilicate. However, there is no subsequent addition of solvent prior to drying the material.

Claim 10 and the claims dependent thereon have not been rejected under either 35USC102 or 35USC103 because claim 1 has been amended to recite that an organic aluminum source is combined with a first solvent to form a mixture in a first step. Then, after the pore-forming agent is added to the mixture, a second solvent is added. This feature is not taught or suggested by either examples 1 or 3 in WO 00/15551. For example, example 1 in WO 00/15551 discloses the addition of aluminum isopropoxide to an aqueous solution of tetrapropylammonium hydroxide. Then, the pore forming agent triethanol amine is added, followed by the addition of tetraethyl orthosilicate. However, there is no subsequent addition of solvent prior to drying the material.

Claims 11-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/15551.

Example 3 on pg. 13 in WO 00/15551 describes a method for making mesoporous alumina-containing composition, comprising:

- dissolving aluminum isopropoxide in isopropanol solvent to form a mixture;
- adding a mixture of water and triethanolamine (i. e. the applicants' "non-surfactant pore forming agent") to the above mixture;
- adding tetraethyl ammonium hydroxide (i. e. the applicants' "alkali") to the above mixture;
- drying the mixture at 100 °C for 24 hours; and
- (evidently) removing the pore forming agent from the dried mixture to obtain the same powder.

Please note that pg. 17, 1st full paragraph in WO 00/15551 discloses that it is within the spirit and scope of the invention to produce inorganic oxides from other metals alone (for example, alumina, etc.) or combination of metals that do not include silica.

The difference between the applicants' claims and WO 00/15551 is that the applicants' claims is that the applicants' claims are drawn to aluminum oxide whereas examples 1 and 3 in WO 00/15551 appear to be directed to a silicon-containing material that also contains some aluminum, however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made

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because pg. 17, 1st full paragraph in WO 00/15551 discloses that it is within the spirit and scope of the invention to produce inorganic oxides from other metals alone (for example, alumina, etc.) or combination of metals that do not include silica.

Claims 23 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/15551.

Example 3 on pg. 13 in WO 00/15551 describes a method for making mesoporous alumina, comprising:

dissolving aluminum isopropoxide in isopropanol solvent to form a mixture;

adding a mixture of water and triethanolamine (i. e. the applicants' "non-surfactant pore forming agent") to the above mixture;

adding tetraethyl ammonium hydroxide (i. e. the applicants' "alkali") to the above mixture;

drying the mixture at 100 °C for 24 hours;

heating the dried mixture at 190 °C for 24 hours; and

(evidently) removing the pore forming agent from the dried mixture to obtain the same powder.

Please note that pg. 17, 1st full paragraph in WO 00/15551 discloses that it is within the spirit and scope of the invention to produce inorganic oxides from other metals alone (for example, alumina, etc.) or combination of metals that do not include silica.

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The difference between the applicants' claims and WO 00/15551 is that the applicants' claims are drawn to aluminum oxide whereas examples 1 and 3 in WO 00/15551 appear to be directed to a silicon-containing material that also contains some aluminum, however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because pg. 17, 1st full paragraph in WO 00/15551 discloses that it is within the spirit and scope of the invention to produce inorganic oxides from other metals alone (for example, alumina, etc.) or combination of metals that do not include silica.

Claims 30-36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/15551.

WO 00/15551 discloses what appears to be the same mesoporous alumina characterized by: having one peak in the XRD diffraction pattern where 2θ is between 0.5° and 2.5° (please see pg. 7 Ins. 3-5); having a wall to wall distance of the mesopores between 3 and 25 nm. (please see pg. 7 Ins. 8-9); having an average surface area between 400 and 1200 m^2/g (please see pg. 8, 3rd full paragraph); having pore volume between 0.3 and 2.2 mL/g (please see pg. 8, 3rd full paragraph); and (optionally) having some of the lattice atoms replaced with metal ions (please see pg. 11, 2nd full paragraph).

The limitation in applicants' claim 30 describing the nitrogen or argon adsorption-desorption isotherm is noted, but the applicants' specification on pg. 17 Ins. 9-12 sets

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forth that this only means that the composition will have at least one type of pores. The composition of WO 00/15551 will also have at least one type of pores.

Please note that pg. 17, 1st full paragraph in WO 00/15551 discloses that it is within the spirit and scope of the invention to produce inorganic oxides from other metals alone (for example, alumina, etc.) or combination of metals that do not include silica.

The difference between the applicants' claims and WO 00/15551 is that the applicants' claims are drawn to aluminum oxide whereas examples 1 and 3 in WO 00/15551 appear to be directed to a silicon-containing material that also contains some aluminum, however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because pg. 17, 1st full paragraph in WO 00/15551 discloses that it is within the spirit and scope of the invention to produce inorganic oxides from other metals alone (for example, alumina, etc.) or combination of metals that do not include silica.

Claim 51 and the claim dependent thereon has not been rejected under either 35USC102 or 35USC103 because this claim 51 is limited to the addition of a basic alkali metal compound to the mixture after the addition of the pore-forming agent, which is not taught or suggested in WO 00/15551.

Response to Arguments

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Applicant's arguments submitted with their amendment filed on Aug. 11, 2006 with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Timothy C Vanoy
Timothy C Vanoy
Primary Examiner
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